



Contemporary Tectonic Stress Orientation at the Azeri-Chirag-Gunashli Field, South-Caspian Basin

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The South Caspian Basin is one of the deepest basins in the world with 25-30 km of sedimentary cover above the basement which is interpreted to be a fragment of Jurassic oceanic crust. Part of its sedimentary infill has been significantly deformed and folded above the Maikop shale. This unit acts as a ductile detachment zone between the productive series and the mainly Cretaceous accretionary rock complex above the basement. This folding results from shortening due to NNE-convergence of the Arabian plate with Eurasia since the Pliocene. In comparison to the surroundings the South Caspian region is understood to behave as a rigid block that is subducting as a deep push-down basin at its northern margin, the NW-SE trending Absheron sill. This interpretation is supported by the distribution of seismicity and tectonic stresses. Seismicity delimitates the South Caspian as a relatively aseismic block with earthquakes at its northern margin reaching depths of ca. 75 kms. Tectonic stresses as derived from earthquake fault plane solutions indicate that the Caspian-Caucasian area is under overall ca. NNE compression, except from the northern boundary normal faulting tectonic regime and WNW-ESE to NW-SE trending maximum horizontal compressive stresses and ENE-WSW to NE-SW trending deviatoric tensile stresses at seismogenic depths.

The folded structures of the Absheron sill contain one of the giant oil fields of the Caspian basin: the Azeri-Chirag-Gunashli field within a steeply dipping anticline. One objective of the stress investigation in the ACG field is to investigate in how far the

Maykop formation actually detaches the stress field of the ACG anticline structure from the subduction related NW-SE trending stresses at depth. The poster presents the first results of a detailed study of contemporary tectonic stresses within the Azeri section of the ACG field.